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is at least partially countervailed by conspicuous biotic characters, such as color, stature, etc., so distinctive as almost to seem specific: the Seri are distinctively dark-skinned, their extreme color-range (so far as known) being less than their nearest approach to any neighboring tribe; they are nearly as distinctive in stature, the difference between their tallest and shortest normal adults being apparently less than that between their shortest and the tallest of the neighboring Papago—though they are not so far from the more variable and often tall Yaqui; and they appear to be no less distinctive in such physiologic processes as those connected with their extraordinary fasting habits. Still more distinctive are the demotic characters connected with their habits of life and modes of thought; and when the sum of biotic and demotic characters is taken, the Seri are found to be set apart from all neighboring Sonoran tribes by differences much more striking than the individual range among themselves.[1]

It is especially noteworthy that the Seri have held aloof from that communality of the deserts which has brought so many tribes into union with each other and with their animal and vegetal neighbors through common strife against the common enemies of sun and sand—the communality expressed in the distribution of vital colonies over arid plains, in the toleration and domestication of animals, in the development of agriculture, and eventually in the shaping of a comprehensive solidarity, with the intelligence of the highest organism as the controlling factor.[2] Dwelling on a singularly prolific shore, the Seri never learned the hard lesson of desert solidarity, but looked on the land merely as a place of lodgment or concealment, or as a source of luxuries such as cactus tunas, mesquite beans, and tasty game; they never formed the first idea of planting or cultivating, and their only notion of harvesting and storing against time of need was the intolerably filthy one of nature's simplest teaching; they apparently never grasped the concept of cooperation with animals, and came to tolerate the parasitical coyote only in that its persistence was greater than their own, and in so far as it was stealthy enough to hide its travail and the suckling of its young against their ravening maws; and they apparently never rose to real recognition of their own kind in alien forms, but set their hands against agricultural and nonagricultural humans as peculiarly potent and hence especially obnoxious animals. Naturally their racial intolerance was seed of battle and blood-feud; and they would doubtless have melted away under the general antagonism but for the natural barriers and unlimited food of their restricted domain.

At present, as for the later and best-known decades of their history,

[1] It seems probable that the Seri were nearer to tribes of southern Baja California than to those of Sonora at the time of the earliest explorations, yet that the distinction was sufficiently strong to warrant the extension of the proposition to these tribes also.

[2] The Beginning of Agriculture. American Anthropologist, vol. VIII, 1895, p. 350. The Beginning of Zoöculture, ibid., vol. X, 1897, p. 295.

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all are at least fairly compatible with the inference that the tribe is exceptionally (if not incomparably) low in the scale of general human development, yet at the same time highly specialized along certain lines; and the inference in turn is corroborated by the coincidence between the special lines of development and the peculiar conditions of environment characterizing the habitat of the tribe.

A striking correspondence between Seri physique and Seri habitat is revealed in the pedal development, with the attendant development of muscle and bone, lung capacity, and heart power, together with other faculties involved in the pedestrian habit. Seriland is a hard and inhospitable home; sea-food is indeed abundant and easily taken, but water is terribly—often fatally—scarce, and obtainable only by distant journeying from the places of easy food supply; moreover, the monotony of the diet is alleviable only by extensive wandering for the collection of vegetal products or severe chase after land animals; while the warlike spirit, apparently inherited from a still less humane ancestry and fostered by the geographic isolation, combines to keep the tribe afoot, avoiding waters, conducting raids, and moving constantly from place to place in the endless search for safety. There is a widespread Seneca tradition that the Seri systematically exterminate weaklings and cripples; and it is beyond doubt that the tradition has a partial foundation in the elimination of the weak and helpless through the literal race for life in which the bands participate on occasion. A parallel eliminative process is common among many American aborigines; the wandering bands frequently undergo hard marches under the leadership of athletic warriors with whom all are expected to keep pace, and this leads both to desertion of the aged and feeble and to increased strength and endurance on the part of the strong and enduring; yet it would appear that this merciless mechanism for improving the fit and eliminating the unfit attains unusual, if not unequaled, perfection among the Seri. Now pedal development is one of the special processes of peripheral (or centrifugal) functioning and growth involved in the general process of *cheirization*, which, coordinately with cephalization, defines human progress;[1] and this developmental process explains the specialization of the Seri along one or more lines, and connects the special development directly with environing conditions.

A notable correspondence between structure and function, of such sort as to reflect the habit and habitat, appears in the conspicuous manual development of the Seri. Enjoying a climate too mild to make houses necessary, finding animal food too plentiful to necessitate elaborate contrivances for the chase or milling or other devices for reducing vegetal food, provided by nature with material (in the form of carrizal) for an ideally suitable water craft, barred by geographic boundaries from neighboring tribes, and having neither material nor interest in commerce, the denizens of Seriland were never forced into the way of mechanical development; yet their simple industries, involving as they

[1] The Trend of Human Progress, American Anthropologist, new series, vol. 1, 1899, p. 401.

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147 do swift stroke and strong grasp and dexterous digitation, are mainly
such as urge manual development more strenuously than would be
182 normal among tribesmen connected with their environment through
the medium of tools. The demand for manual strength and skill is
intensified among the Seri by both natural and domestic conditions;
the ever-ready (and almost the sole) material suitable for simple
adjunct to the hand abounds in the form of wave-worn cobbles; these
cobbles are easily usable in such wise as to serve all ordinary purposes,
and their abundance discourages the production of more highly differ-
entiated tools; while their habitual use promotes manual strength and
deftness, coupled with that digital freedom (required, for example, in
grasping a ball) which most clearly distinguishes the human hand from
the subhuman paw. Conjoined with these natural conditions are
domestic demands tending to cultivate manual fitness and eliminate the
manually unfit; for, in addition to the direct industrial premium on dex-
terity, through which the dexterous survive while the clumsy starve, there
is a special premium growing out of the marriage custom, through which
[143] only the manually efficient (and at the same time morally acceptable)
are put in the way of leaving lines of descendants.[1] Naturally, in view
of the combination of factors, all traceable directly or indirectly to
environmental conditions, the Seri afford a peculiarly striking example
of cheirization extended to an entire tribe (if not to a genetic stock of
people)—indeed the remarkably developed Seri hands and feet first
suggested the importance of this process of human development and
led to its formal characterization.

Accordingly, the robust-bodied and slender-limbed yet big-fisted and
143 big-footed Seri seem to be adjusted, so far as several of their more
182 striking somatic characters are concerned, to distinctive habits them-
selves reflecting a distinctive habitat; and the coincidences appear to
reveal and establish the law of interaction between the human organism
and its environment—an interaction effected through the habits and
hence through the normal functioning of the individual organisms as
constrained through their collective relations. And recognition of the
147 law of interaction opens the way to consideration of other correspond-
143 ences between structures and functions and environing conditions.
182 Conspicuous among the more strictly functional traits of the Seri is
the intensity of action characteristic especially of the warriors, though
3/2 in less degree of the entire tribe—an intensity made all the more strik-
ing by contrast with the extreme inertness between stresses. Mani-
festly the capacity for concentrated effort is in harmony with the
tribal habits, themselves reflecting habitat. The resource of prime
importance in Seriland—that which directly and constantly conditions
the very existence of human inhabitants—is potable water. This prime
source of life is too heavy to be transported and too unstable to be
stored with the facilities of primitive culture, yet it is always within
reach of an organism strong enough to journey ten or twenty or fifty

[1] The martial customs of the tribe are described postea, pp. 279-281.

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miles in search of it, and acute enough to follow trails and indications. Naturally the meager water-supply serves as a mechanism for sorting out and preserving the strong and the acute, and for eliminating the weakly and the dull; and hence the tribe have developed a faculty, or perhaps a potentiality, of distinctive sort—the potentiality of providing against thirst-death by a reserve power in the organism itself rather than in the form of mechanical devices such as characterize higher culture. Quite similar are the relations to the resource of second importance, i. e., ordinary food. Habituated to dispensing with storage and transportation of their primary resource, and accustomed to finding food whenever forced to sufficiently active effort to obtain it, the Seri have never grasped that first principle of thrift expressed in the accumulation of food supplies; and accordingly they intuitively rely on successful fishing or chase or search of vegetal edibles for sustenance, and habitually delay effort until they are stirred into activity by the pangs of hunger. Naturally this improvidence serves as another mechanism for perpetuating families of stored vitality, and especially those able to prevail over swift or strong or cunning quarry by sustained vigor and alertness after prolonged deprivation; and the effect of this mechanism, too, is to develop a reserve power in the organism itself, in lieu of the material reserve made through thrift in higher culture. Similar in their consequences are the relations of the individual organisms to the third industry of Seriland, i. e., navigation of the gale-swept and tide-troubled waters. Even the buoyant balsa can not weather the williwaws or ride the tiderips of El Infiernillo without exercise of the utmost strength and skill on the part of the navigators; while the often persistent storms may delay for days embarkation on voyages in quest of fresh water or food. Naturally, the frequent delays and not infrequent perils of such navigation constitute a mechanism for selecting navigators possessed of reserve powers adequate to meet desperate emergencies with vigor and judgment even after enervating waits for wind and tide, while those not so well endowed are either brought up to standard in their hard training school or expelled from their class by drowning or dashing on the rocks, as may happen; so that the effect of this mechanism also is to preserve individuals and perpetuate generations characterized by reserve power, and hence to develop latent potentiality in the tribe. Now, the normal product of these and other natural mechanisms immediately reflecting environmental conditions is capacity for spurts, or for intense functioning under severe stress, despite accentuation of the stress by thirst or hunger or exhaustion, or by all combined—i. e., the effect of habitat and habit is to produce precisely such a somatic regimen as that so conspicuously displayed by the Seri folk. So the intensified activity with long intervals of inertness, simulating the habits of carnivorous and some other lower animals, and hence suggesting primitive condition, would appear to be largely a phylogenetically acquired character expressing specific adjustment to environment.

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To the actual observer of the Seri in his prime there is an indefinable but none the less impressive harmony between the intense regimen and the trenchant structural development characteristic of the tribe—a harmony like unto that felt by naturalist and artist alike in viewing at once the clean-cut form and vigorously easy mobility of tiger or thoroughbred horse; and simple inspection of the lithe limbs and body-muscles stirs into living realization a half-felt inference from many facts—the obvious and indubitable inference that they are stress-shaped structures. Accordingly, the concentrated and robust bodies, the shapely jaws, the well-chiseled arms, and the statuesque legs of the Seri, no less than their powerful hands and bulky feet, direct special attention to the axiom that somatic structures are the product of exercise, and indicate with convincing clearness that the structures are trenchantly developed because of the supreme intensity of the creative exercise. It may be impracticable to outline in terms of metabolism the precise processes of waste and repair in organs and organisms, or to define the relative periods of action and assimilation (or of catabolism and anabolism) best adapted to the development of motile tissue; yet the external facts of all bodily growth demonstrate the efficiency of alternating effort and repose, while the characteristics of highly developed animal bodies (including those of the Seri) demonstrate that the most beneficial exercise is that of relatively brief but intense stresses alternating with relatively long intervals of sluggish movement or complete repose. Moreover, the facile metabolism involved in the widely alternating regimen implies exceptional somatic plasticity of the sort normally accompanying youth and attending tissue growth; and this persistent bodily plasticity is in harmony with the peculiarly dilatory maturation characteristic of the Seri tribe. So the animal-like bodies of the Seri, no less than their animal-like movements, which at first sight suggest primitive condition, may safely be held in large measure to reflect specific habits of life, themselves reflecting a distinctive habitat.

Still more suggestive to the observer than the well-molded structures and the intense functioning with which they are conjoined are those elusive yet persistent characteristics of the Seri comprised in their distinctive race sense—characteristics ranging from overweening intra-tribal pride to overpowering extratribal hatred. Even at first blush it would seem obvious that the tribal isolation, itself the reflection of environment, would necessarily tend toward a segregative habit with concomitant hostility toward aliens; yet the race-sense of the Seri so far transcends that of other segregated tribes as to suggest the existence of a specific cause. So, too, it would seem obvious that the race feeling gathers about a corporeal nucleus in the form of the race-type exemplified in the heroic stature, the shapely face, the mighty chest, the luxuriant hair, the well-modeled muscles, the powerful feet and hands, the "collected" carriage, and the stored vitality, which (as already indicated) synthesize the environmental interactions of generations; yet the actual student can not avoid the impression that the

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143 bound tribe and their alien neighbors. Yet the general application of the law leads only to a more specific application; for, just as the career of the stirp is made up of a succession of vital maxima and minima, so the lifetime of the individual, even in the median stage, is made up of a series of vital climaxes separated by relatively inert intervals; and, as recognized by every naturalist and romancist, every philosopher and poet, in every stage of culture, it is during the periods of conative domination by the master passion that the career of the individual is shaped and that the stirp-sentiment (or susceptibility to kind) culminates in intensity. It follows that the progeny of successive generations represent not merely the optimum median stage of life in which vitality and virility and multiebrity are at flood, but the very climaxes of this stage in which manhood and womanhood attain their ideals, and in which the ideals react on the physical system with unequaled intensity; it follows in turn that each generation must (in so far as intellectual tension can control long series of metabolic interactions after the manner in which short series are controlled by direct volitional exercise) incarnate the ideals of the preceding generation; whence it follows still further that in general isolated race-types tend constantly and cumulatively to increase in definiteness—at least until the somatic factors are counterbalanced by demotic relationships arising with considerable increase in population. It is true that the extent to which the incarnation of ideals is effective or even possible has not been measured; it is also true that the naturalists of the higher culture-stages commonly neglect the process; yet the occasional recognition of its positive aspect, as in Goethe's "elective affinities" and in Jacob's getting of "ringstraked, speckled, and spotted" stock (Genesis xxx, 37-41), and the practically universal recognition—more especially among primitive peoples—of its negative aspect in adverse prenatal influences, clearly indicates its importance; the fact that the ancient Greeks at once idealized in unparalleled degree, and produced unexcelled perfection in, the human form being of no small significance. Even if the measure of the incarnation of ideals be reduced to the lowest minimum consistent with common knowledge, it remains true that the progeny of successive generations are not the offspring of average parents, but of pairs at the perfection and conjugal culmination of their virile and multiebrile excellencies; so that the generations must run in courses of cumulatively increasing racial (or human) perfection, under a general *law of conjugal conation*.

143 In extending the general law of conjugal conation to the Seri, it
182 is found peculiarly applicable, in view of their distinctive marriage
186 custom, the effect of which is to intensify conjugal sentiments, with the attendant magnification, and potential if not actual incarnation, of ideals.[1] Accordingly there would appear to be a harmony between

[1] The law of conjugal conation was indeed suggested by observations on the peculiar marriage customs and peculiarly developed race-sense of the Seri tribe, and it has already been applied in certain of its aspects as an explanation of the initial humanization of mankind (The Trend of Human Progress. American Anthropologist, new series, vol. 1, 1899, pp. 625-655).

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Seri race-sense and Seri race-type no less delicate than that between the stressful action and the stress-shaped structure of the tribe, and while the inception of both type and feeling may be ascribed to the isolated environment, it seems manifest that both have interacted constructively and in cumulative fashion through a significant process exemplified more clearly by this tribe than by others thus far studied. At the same time, analysis of the harmony between type and sentiment indicates that the lowly Seri are actually, albeit unconsciously, carrying out a meaningful experiment in stirpiculture—an experiment whose methods and results are equally valuable to students. The Seri gymnastic and the Seri stirpiculture are in close accord, in that both are conditioned by initially dilatory yet ultimately intense action; the results are equally accordant in that the one conduces toward individual vigor and the other toward a vigorous and distinctive stirp; while the excellence of the methods (viewed from the somatic standpoint) is attested by the magnificence of the product. Now, comparison of the stirpicultured Seri with contemporary tribes shows that the desert-bound folk have attained unequaled somatic development, and suggests that the intuitive stirpicultural processes have been rendered peculiarly effective through the persistence of that tribal isolation in which the processes apparently took rise; so the race-sense of the Seri may be regarded as the product of long-continued stirpicultural processes, initially shaped by environment, yet developed to unusual degree by somatico-social habits, kept alive largely through continuous environmental interaction.

Summarily, the Seri are characterized by noble physique, by peculiarly swift and lightsome movements, by great endurance coupled with capacity for vigorous action, by animal-like symmetry and slowness of maturation, and by various minor attributes combining with the major features to form a distinctive race-type; and they are still more conspicuously characterized by an acute race-sense which holds them apart from all aliens. At first sight, several of their somatic attributes seem incomparably primitive, yet analysis of the attributes in the light of certain laws which they exemplify better than other peoples thus far studied indicates not so much a lack of development as an excess of growth along purely somatic lines, with a correlative defect of development along demotic lines; and when the lines of growth are traced to the sources and conditions, it becomes fairly clear that the aberrant development of the tribe is merely the reflection of a distinctive environment operating (evidently) throughout a long period. In brief, the somatic interest of the Seri seems to center in the remarkable adjustment of the tribe to a peculiar environment—an adjustment of such delicacy as to imply interaction throughout many generations.

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appear to form a fairly trustworthy basis for consideration of the Seri food habits. 262

On reviewing the constituents it would appear that the Seri must be regarded as essentially a maritime people, in that about two-thirds of their food is derived from the sea; also that they must be deemed essentially carnivorous, since fully five-sixths of their diet (84 per cent plus a share of the miscellaneous—chiefly scatophagous—category) is animal. The tabulation does not show the relative proportions of the several constituents cooked and eaten raw, but the best available data indicate that fully three-fourths of the ordinary dietary, both animal and vegetal, is ingested in raw condition, and that the greater part of the remaining fourth is imperfectly cooked.

In recapitulating the devices for food-getting, it is found that nearly all of the more distinctive artifacts and crafts are either directly or indirectly connected with that primary activity of living things, food-conquest. Foremost among the distinctive artifacts of the Seri, in its relation to daily life and in its technical perfection, is the canteen-olla; probably second in importance, and also in technical perfection, is the balsa—whose functions, however, extend beyond simple food-getting; next comes the crude and simple, yet economically perfected, turtle-harpoon, with its variants in the form of arrow (with a function in warfare as well as in food-getting) and fire-drill; while the light basket-tray, although capable of carrying ten to twenty-five times its own weight, is perhaps the least perfect technically of the artifacts directly connected with sustentation. And it should be noted that the prevailing tools—hupf, ahst, multifunctional shell, and awl of mandible or bone or tooth—have either an immediate or a secondary connection with food-getting. 182

NAVIGATION

At first sight Seriland seems an abnormal habitat for a primitive people, since its land area is cleft in twain by a stormy strait—a strait whose terrors to the few Caucasian navigators who have reached its swirling currents are indicated by their appellations, "El Canal Peligroso de San Miguel"[1] and "El Infernillo"; for such a stretch of troubled water is commonly a more serious bar to travel than any moderate land expanse. This intuitive notion of the effectiveness of a water barrier, and the correlative feeling of the incongruity of a land barrier insuperable for centuries, is well illustrated by prevailing opinion throughout northwestern Mexico; for it is commonly supposed in Sonora and neighboring states that Seriland is conterminous with Isla Tiburon, i. e., that the mainland portion of the province (including Sierra Seri with its flanking footslopes) lies beyond the diabolic channel. Yet longer scrutiny shows that the superficial impression merely mirrors Caucasian thought and fails to touch the essential conditions, 131

[1] Hardy, Travels, p. 386.

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in which men lived alongshore and adjusted themselves to maritime conditions rather than to terrestrial environments; a stage evidently but barely passed by the Seri, since they still subsist mainly on sea food, still retain their suggestive navigation, and still view their stormy straits and bays as the nucleus and noblest portion of their province. 501

HABITATIONS

Among the Seri, as among primitive folk generally, the habitation reflects local conditions, especially climate and building materials. Now, Serriland is a subtropical yet arid tract, where rain rarely falls, frost seldom forms, and snow is known only as a fleeting mantle on generally distant mountains, so that there is little need for protection from cold and wet; at the same time the district is too desert to yield serviceable building material other than rock, which the lowly folk have not learned to manipulate. Moreover, the tribesmen and their families are perpetual fugitives (their movements being too erratic and aimless to put them in the class of nomads); they are too accustomed to wandering and too unaccustomed to long resting at particular spots to have a home-sense, save for their motherland as a whole; and, just as they rely on their own physical hardihood for preservation against the elements, so they depend on their combined fleetness and prowess for preservation against enemies. Accordingly, the Seri habitation is not a permanent abode, still less a domicile for weaklings or a shrine for household lares and penates, not at all a castle of proprietary sanctity, and least of all a home; it is rather a time-serving lair than a house in ordinary meaning. 182 342

Despite the poverty of the material and the squalor of the structure, certain features of the Seri jacal are notably uniform and conventional. In size and form it recalls the passing "prairie schooner", or covered wagon; it is some 10 or 12 feet long, half as wide measured on the ground, and about 4½ feet high, with one end (the front) open to the full width and height, and the other nearly or quite closed. The conventional structural features comprise the upright bows and horizontal tie-sticks forming the framework. The bows are made of okatilla stems (*Fouquiera splendens*) roughly denuded of their thorns; each is formed by thrusting the butts of two such stems (or more if they are slender) into the ground at the requisite distance apart, bending the tops together into an overlap of a yard or two, and securing them partly by intertwisting, partly by any convenient lashing; and about five or six such bows suffice for a jacal (the appearance of the bows is fairly represented by the ruin shown in plate VII). Next come the tie-sticks, which consist of any convenient material (okatilla stems, cane-stalks, paloblanco branches, mesquite roots, saguaro ribs, etc.), and are lashed to the butts by means of withes, splints, or fiber wisps, at a height of some 4 feet above the ground, or about where the walls merge into the roof. With the placing of these sticks the conventional part 342

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mon convenience. Usually the several jacales are entirely separate; but at Punta Tormenta, Punta Narraganseti, and still more notably at Roda Ballena, individual huts were found either extended to double length or joined obliquely in such wise as to show two fronts (as illustrated in plate VI). The conventional frameworks appear to be common tribal property, at least to the extent that an abandoned skeleton may be preempted by any comer; while the addition of walls and roof appears to afford a prescriptive proprietary right to the elderwoman and family by whom the work is done—though the right seems to hold only during occupancy, or until the temporary covering is dislodged.

The jacales are without semblance of furnishing, beyond an occasional shat and a few loose pebbles used as hupfs; though the nooks behind the bows and tie-sticks sometimes serve as places of concealment for paint-cups, awls, hair bobbins, and other domestic trifles. There is no floor but earth, and this remains in natural condition, except for trampling and wearing into wallows, recalling those of fowls and swine, which afford a rough measure of the periods of occupancy; there is no fireplace—indeed, fires are rarely made in the jacales, nor for that matter frequently anywhere; and there are no fixed places for bedding, water ollas, or other portable possessions, none of which are left behind when the householders are abroad.

Little is known of the actual process of jacal building, especially in Seriland proper; but the observations of Señor Encinas and his vaqueros on the frontier corroborate Mashém's statements that the houses are built by (and belong to) the matrons; that several women customarily cooperate in the collection of the okatilla and erection of the framework; that the only tools used in the processes are hupfs and miscellaneous sticks; and that the placing and fitting of the beams and tie-sticks are accompanied by a chant, usually led by the eldest matron of the group. The same informants support the ready inference from the structure that the shrubbery and other material forming walls and roofs are gathered and placed from time to time by the women occupying the jacales.

The Seri building chant is suggestive. Neither Señor Encinas nor Mashém regarded it as religious or even ritualistic, but merely as a work-song designed (in the naïve notion of the latter) to make the task lighter; and it seems probable that the local interpretation is correct. If so, the simple chant at once offers rational explanation for its own existence, and opens the way to explanation of the elaborate building rituals of more advanced tribes. The work-song is a common device in many lowly activities, ranging from those of children at play to those of sailors at the windlass, and undoubtedly serves a useful purpose in guiding, coordinating, and concentrating effort; to some extent the vocal accompaniment to the manual or bodily action apparently expresses that normal interrelation of functions manifested by second-

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ary sense-effects (as when the sense of smell is intensified by exercise of the organs of taste), or, in another direction, by the habit of the youthful penman who shapes his letters by aid of lingual and facial contortion; yet it is a characteristic of primitive life—one doubtless due to the interrelations of psycho-physical functions—to not only employ but to greatly exalt vocal formulas associated with manual activities, so that words, and eventually *the* Word, acquires a mystical or talismanic or sacred significance pervading all lower culture—indeed the savage shaman is unable to work his marvels without mumbled incantations ending in some formulated and well-understood utterance, and his practice persists in the meaningless mummery and culminating "presto" of modern jugglery. So, viewed in the light of psycho-physical causes and prevalent customs connected with vocal formulas, it would seem probable that the conventional features of the Seri jacales are crystallized in the tribal lore quite as effectually through the associated work-chants as through direct memory of the forms and structures themselves. And the simple runes chanted in unison by Seri matrons engaged in bending and lashing their ekatilla house-bows apparently define a nascent stage in the development of the elaborate fiducial house-building ceremonies characteristic of various higher tribes; for the spontaneous vocal accompaniment tends naturally to run into ritual under that law of the development of myth or fable which explains so many of the customs and notions of primitive peoples.[1]

APPARELING

Slightly as they have been affected by three centuries of sporadic contact with higher culture, the Seri reveal many marks of acculturation; and the most conspicuous of these are connected with clothing, especially on the frontier, where women and even warriors habitually wear a livery of subserviency in the form of cast-off Caucasian rags (as illustrated in most of the photographs taken at Costa Rica). Even in the depths of Seriland the native fabrics are largely replaced by white men's stuffs, obtained by barter, beggary, and robbery; yet it is easy to distinguish the harlequin veneer of borrowed trappings from the few fixed types of covering that seem characteristic.

The most distinctive piece of apparel is a kilt, extending from waist to knees, worn alike by men and women and the larger children. Aboriginally it was either a birdskin robe or a rectangle of coarse textile fabric, secured at the waist by a hair-cord belt; aculturally it is usually a rectangle of manta (coarse sheeting) or other stuff, preferably cotton or linen but sometimes woolen, fastened either by tucking in the corners or by a belt of cord. Good specimens of the aculturel cloth kilt worn by men and larger boys are illustrated in plates XVI

[1] The law of fable in its relation to primitive surgery is formulated in the Sixteenth Ann. Rep. Bur. Am. Eth., 1897, p. 33.

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Summarily, the customary apparel of Seri men and women may be regarded as limited to three articles—(1) a kilt, normally of coarse textile fabric, which is made a prime necessity by a well-developed pudency; (2) a short wammus, also normally of coarse textile fabric, which is apparently regarded as a convenience and luxury rather than a necessity; and (3) a robe, normally of pelican skin, sometimes substituted for either or both of the other articles, but ordinarily used as bedding or as a buckler. The most valued of these articles is the robe, which in the absence of the others replaces the kilt; yet pudency demands the habitual use of some form of kilt, while both wammus and robe are held so far superfluous that they may be laid aside or bartered or otherwise dispensed with whenever occasion arises. 291

On considering the special functions and probable genesis of the Seri apparel, the student is impressed by the absence of the breech-clout, except perhaps in temporary improvisations—though the absence of this widespread article of primitive costumery need awaken little surprise in view of the environment, and especially of the abounding barbs of Seriland, which render all apparel of doubtful value save for the protection of tissues softened by habitual covering. The prevailing thornliness of the habitat renders the free-flowing and easily removable apron the most serviceable protection for the exposed vitals of the pubic region; and this device, a common one in thorny habitats generally, grades naturally into the short skirt or kilt; while it would well accord with the maritime habit and habitual thought of the Seri to apply the tough and densely feathered skin of the pelican to the purpose. This suggestion as to the nascent covering of the tribe consists with the tribal faith, in which the Ancient of Pelicans ranks as the creative deity, while its modern representative is esteemed a protective tutelary possessing talismanic powers against cold, wet, bestial claw and fang, alien arrows, and all other evils; so that the use of this feathered pelt as a shield against spiny shrubbery, sharp-leaved sedges, and barb-thorned cacti is quite in harmony with Seri philosophy. Accordingly it seems clear that the pelican-skin kilt was autochthonous among the Seri, and that it was the original form of tribal apparel; and it is of no small significance that the type persists in actual use as well as in suggestive vestigial forms, such as pelican-down swaddling for infants, pelican-feather plumes on cradle nets, etc. 182 291 [776] [774]

The passage from the pelican-skin kilt to the garment of textile fabric under the slow processes of primitive thought may not be traced confidently, though a strong suggestion arises in the Seri hair-cult (a Samsonian faith not without parallel in far higher culture) under which mystical powers and talismanic virtues are imputed to the human pelage. It is in connection with this cult that the Seri locks are so attentively cultivated and so assiduously preserved and consecrated to more intimate personal uses in belts, necklaces, and the like; and although the connecting links have not been found, it is thoroughly 174 291 826

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

and groups; the linguistic activities serve to extend social relations in space and time, and the sophic activities to integrate and perpetuate all relations; but it is through the industrial activities that human intelligence interacts with physical nature and makes conquest of the material world. Accordingly, industries act as a steady and never-ceasing stimulus to intelligence; accordingly, too, the industrial activities afford the simplest and surest measure of intellectual advancement.

Under this view of the place of industrial activities in human phylogeny, certain phases of Seri technology acquire importance and especial significance.

1. One of the most conspicuous features of Seri craft is its local character. The foodstuffs, the materials for appareling and habitations, and the substances utilized in the several lines of simple handicraft are essentially local; moreover, the characteristic methods and devices evidently reflect local environmental conditions. There are, indeed, a few phenomena suggesting, and a still less number demonstrating, extraneous origin; the balsa and the kilt are sufficiently similar to devices of other districts to suggest, though not to prove, genetic identity (indeed, the sum of indications of local origin is much weightier than the several suggestions of extraneous derivation); the iron harpoon-points and arrow-tips are mainly of local flotsam, and are essentially provincial in modes of employment; the chipped stone arrow-tips, though local in material, are foreign in motive; but on summarizing the industrial phenomena, it would appear that by far the greater share are essentially local, while the few of exceptional (and extraneous) character can be pretty definitely traced to importation through the social interactions of recent centuries.

2. An equally conspicuous feature of the industrial craft of the Seri is the dominance of chance in both processes and devices. The traditional "fisherman's luck" is made exceptionally uncertain by the sudden gales and shifting currents of Seriland shores, while the absolute necessaries of life on land are still more capricious than those alongshore; this uncertainty of resources has profoundly affected the somatic features of the tribesman, as indicated elsewhere (ante, p. 139); and that the mental attributes of the folk are even more profoundly affected is attested by the rôle played by chance in the selection and shapement of the prevailing tools of stone and shell. The large rôle of chance in Seri life is also revealed, though less directly, in the overweening mysticism of zoötheistic faith, with its material reflection in zoömimic craft.

3. When the local and fortuitous features of the Seri industries are juxtaposed they are found to express a notably inchoate or primitive stage of industrial development. In both the local and the fortuitous or accidental aspects, the activities are so closely adjusted to the immediate environment as to approach the instinctive agencies and movements of bestial life, and correspondingly to diverge from the composite

1: McGee E-5 (1894-1895)1898 NU31 Ser. NU31

and cosmopolite characters of higher humanity; the dearth of extraneous devices denotes absence or intolerance of that acultural interchange accompanying and marking the progress of peoples; and the dearth of inventions denotes feebleness of creative faculty and absence of that self-confidence which accompanies and measures progress in nature-conquest. 105 13 182 [177]

4. When the local and fortuitous features of the Seri craft are viewed in their serial or sequential relations, they are found to reflect and attest autochthonal development. Excepting the few acultural processes and devices whose acquisition may confidently be traced to certain social interactions of the historic period, the Seri technic is too closely tied to local environment to warrant any supposition of importation from other districts. The question of the birthplace of the people may be left open in this case as in every other; but the birthplace of practically all those activities and activital products which define the folk as human was manifestly Seriland itself—so that the tribe, considered as a human folk rather than as a zoic variety, must be classed as autochthonous. 105 177

Summarily, then, the Seri industries are significant as (1) local, (2) fortuitous, (3) primitive, and (4) autochthonous; and these features combine to illumine a noteworthy stage in primitive thought. 105

5. On juxtaposing these significant features of Seri technic, they are found to reflect the tribal mind with noteworthy fidelity, and hence to indicate the sources of Seri mentations, and of the local culture in which these mentations are integrated. The local foodstuffs—especially that vital standard of values in arid regions, water—are periodic sources of the strongest aspirations and inspirations of industrial life, and the methods and devices for food-getting are but the legitimate offspring of the inevitable relation between effort and environment; the conspicuous rôle of chance is but the composite of the hard and capricious environment on the one hand, and of the lowly thought reflecting that environment on the other hand; the zoic faith into which the magma of recurrent chance has semicrystallized finds carnate symbols either in local beasts or in fantastic monsters suggested by those beasts; even the mating instinct, second only to thirst among the impelling action-factors of the folk, is so profoundly and bitterly provincial as to exclude foreign ideals to a degree unparalleled among known peoples. The industrial materials are local—but not more local than the thoughts in which they are reflected; the technical methods are unmistakably the offspring of the environment—but they are equally the offspring of minds reflecting that environment and no other; the few and simple devices stand for integrations of experiences, instinctive rather than ratiocinative, the germ of invention rather than even its opening bud—but the experiences bear the marks of that environment and no other. Accordingly, the mental side of Seri industry, and, indeed, of all Seri life, appears to be the counterpart of the physical 13 181 182

side.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

relation may be considered to begin in the animal realm with organisms adapted to environment through physiologic processes, and to end in that realm of enlightened humanity in which mind molds environment through complete nature-conquest. In the serial scale so defined the various primitive tribes and more advanced peoples may be arranged in the order of mental power or culture-status; when the same arrangement will express in inverse order the relative closeness with which the several tribal minds reflect their environments. It follows that the lowly minds and craft of the Seri reflect their distinctive environment with exceeding, perhaps unparalleled, closeness, because of their very lowliness; it follows, too, that any other equally lowly folk imported into the region and perfectly wonted to it by generations of experience would equally reflect the physical features of the region in their craft and in their thinking; it follows, also, that if the Seri were transported into any other district of equally distinctive physical features, they would gradually adapt themselves to the new environment—though with some added intelligence, and hence with diminished closeness, as is the way of demotic development—in such manner that their craft and thinking would reflect its features. In a more general way it follows that those similarities in culture, or activital coincidences, which have impressed the ethnologic students of the world (notably Powell and Brinton), are normal and inevitable in primitive culture and of diminishing prominence with cultural advancement.

Social Organization

Among the Seri, as among many other aboriginal tribes, the social relations are largely esoteric; moreover, in this, as in other savage groups, the social laws are not codified, nor even definitely formulated, but exist mainly as mere habits of action arising in instinct and sanctioned by usage; so that the tribesmen could not define the law even if they would. Accordingly the Seri socialry[1] is to be ascertained only by patient observation of conduct under varying circumstances. Unfortunately, the opportunities for such observation have been too meager to warrant extended description, or anything more, indeed, than brief notice of salient points.

Class and Totems

The most noticeable social fact revealed about the Seri rancherias is the prominence of the females, especially the elderwomen, in the management of everyday affairs. The matrons erect the jacales without help from men or boys; they carry the meager belongings of the family and dispose them about the habitation in conformity with general custom and immediate convenience; and after the household is prepared, the men approach and range themselves about, apparently in a definite

[1] A convenient term proposed by Patten.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

584 aught in the simple yet puissant law of conjugal conation—that law
585 whose motive underlies the world's song and story and all the pulsing progress of mankind as the inspiration of most men's work and most women's hopes—the vital intensity of this era passes down the line of blood-descent to the betterment of later generations. (4) Another collateral feature is the necessary reaction on clan and tribe; for not only
[182] [186] does the individual character-making raise the average physique and morale of the group, but the carefully studied restraint of excessive individuality serves to strengthen still further the tribal bonds and to lift still higher the racial bar against aliens. The blackest crime in the Seri calendar is the toleration of alien blood; and no more effective device could be found for keeping alive the race-sense on which this canon depends than that virtually sacramental surveillance of sexual intimacy which Seri usage requires.[1]

000 On scanning the conventional classifications of human marriage in the light of the Seri customs, it becomes clear that these customs define a plane not hitherto recognized observationally. For convenience, this plane and the mode of marriage defining it may, in special allusion to the correlative race-sense, be styled *ethnogamy;* and the more systematic characters of this mode and plane of marriage may be outlined briefly:

1. The most conspicuous character of ethnogamic union, as manifested in the type tribe, is its absolute confinement to the consanguineal group. The breach of this limitation is hardly conceivable in the minds of the group, since aliens are not classed as human, nor even dignified as animals of the kinds deified in their lowly faith, but contemned as unclean and loathsome monsters; yet the infraction has a sort of theoretical place at the head of their calendar as an utterly intolerable crime. In respect to this character, ethnogamy corresponds fairly with the endogamy of McLennan, Spencer, and others, i. e., with the tribal endogamy of Powell.

2. A hardly less conspicuous character of ethnogamic union is the formality, or legality, accompanying and reflecting the collective nature of the function. In this respect ethnogamy is the direct antithesis of that hypothetical promiscuity postulated by Morgan and adopted by Spencer, Lubbock, Tylor, and others; and the customs of the type tribe go farther, perhaps, than any other example in verifying the alternative

[1] The remarkable race-sense of the tribe, with the conjugal conation in which it seems to root, are discussed *seats, pp.* 160–163. There is nothing to indicate, and much to contraindicate, that the Seri are consciously engaged in stirpiculture; yet their social and ethnical doctrine would seem to be no less effective in developing race-sense, with its concomitants, than were those of prehistoric men in developing the physical attributes of animal associates, such as the wool-bearing of the sheep, the egg-laying of the fowl, and the milk-giving of the cow; or the still more striking mental attributes, such as the servility of the horse, the fidelity of the dog, and the domesticity of the cat. All these attributes are artificial, though not consciously so to their producers, hardly even to modern users; they are by-products of long-continued breeding and exercise, commonly directed toward collateral ends (as when the horse was bred for speed, the dog for hunting, and the fowl and cat for beauty); and, similarly, the Seri race-sense would seem to be largely a by-product of faith-shaped customs designed primarily to propitiate or invoke mystical potencies—yet the collateral effect is not diminished because overlooked in the primary motive.

2: Kroeber E-5 (1930)1931 NU31 Seri NU31

114 Davis has had fuller opportunity to investigate, but confined my
121 attention to the social and religious sides of their life. There was the more reason for this since it is in dealing with these latter aspects, where verbal communications are as important as observation, that McGee's monograph is most tenuous and dubious. I also secured linguistic notes for the preliminary placing of the curious tonal speech of the Seri.

178 Seri culture in its present form is a fragmentary thing such as could hardly have existed under purely native conditions. Religion
182 especially has suffered, no doubt under Christian influence, without many elements of Christianity having been taken over in exchange. Of mythology, only tatters seem to remain; of ritual, little more; only shamanism seems to be fairly well preserved. Nor, beyond the Spanish names for God and the cross, do the Seri give evidence of being or having been Catholics. The result is that they seem remarkably religionless. I do not know of a native people that appears so free from superstition and so unspiritual in its attitudes. Possibly I conferred with the wrong informants; but those I talked with seemed unsecretive. Social culture is better preserved, as is evident from a set of kinship terms that are numerous, precise, and untouched by Spanish concepts. On the other hand, there is little formal social organization. Whether this is also the result of a loss, is hard to say. The Seri may never have had sibs or clans; but the fact that they appear to lack them now is no positive evidence that they were without them three centuries ago. Shifts of residence, contraction of territory, shrinkage of numbers, amalgamation of distinct bands, may well have obliterated much of such social fabric as they once possessed. Games and the calendar are wholly native and intact, but taboos connected with sex, age, food, and the like seem fewer than among the backward tribes of the southwestern United States. It seems reasonable to construe this condition as the result of varyingly hostile, parasitic, and missionizing Spanish-Mexican contacts; especially when one realizes how overwhelmingly, though also spottily, this influence has affected the other tribes of Sonora—the Yaqui, Mayo, Pima, and Opata.

101 Historically the Seri are not a tribe but the consolidated rem-
131 nant of a series of dialectically distinct tribes that once held the barren coast of Sonora from Guaymas to Puerto Libertad. Tiburon
174 Island is the stronghold in which the mixed survivors, probably now numbering less than 200, have taken refuge, and, owing to its inaccessibility, drought, and poverty, have succeeded in maintaining themselves and their blended and reduced culture. Toward the interior, it is doubtful if they ranged beyond the present line of the Southern Pacific railroad, if that far. Orozco y Berra indeed assigns them territory up the Sonora River to Ures, on his famous map, which is still basic to all other ethnic maps of Mexico. But from Hermosillo

2: Kroeber E-5 (1930)1931 NU31 Seri NU31

to prepared defence or attack. The Seri mode of life and induced temperament must have led to many instabilities, with make-shifts often actually more in use, but finished or efficient types of artifact seemingly latent and sporadically emerging in the stream of their culture. Thus, the shell alongside the double-bladed paddle; plain baskets seen in use, but a series patterned in a definite style being produced as soon as their manufacture was profitable; unroofed and roofed houses. Similarly, the two-pointed fish-spear and olla carrying-net, which neither McGee nor I saw, but which may persist in memory in the culture ready for revival on occasion.

Somewhat similar, perhaps, is the status of polygyny, which prevailed in McGee's day (p. 279) a half generation after a disastrous war, but was not the rule, or was successfully disavowed, in earlier times and to-day.

Errors and Misconstructions

McGee dwells at length (pp. 152-156) on three strong trends of Seri life and culture: the pedestrian habit, accompanied by quite exceptional fleetness; a hand and tooth sense with corresponding absence of tool sense; and a race sense unalterably opposed to mixture with alien blood.

All the Sonora and Southwestern Indians were and largely still are fast and sustained long-distance travelers on foot. There is nothing to show that the Seri were superior to the others. The one time they remember having met the Papago in a foot-ball race, they were beaten. Yaqui warfare is a record of at least equal endurance and ability to evade superior civilized forces. In fact the faculties of the Yaqui are the more remarkable in that they have always been settled farmers and often moved in larger bodies. The incredible fleetness of the Seri was probably most manifest in mesquite thickets and on rocky ground. That they should outrun a horseman on an open plain is the sort of tale that one hears on every frontier and which the more intelligent frontiersman does not take seriously.

Hand and tooth sense was undoubtedly strong among the Seri. The same thing, especially as regards food, is reported for the Lower Californians. But the inference of lack of tool sense is erroneous. Knives are prized by the Seri, and, along with nails, axes, and the like, are handled with a direct, crude effectiveness. The crudity is due to the lack of standard, order, and interest in finish which pervades all Seri cultural manifestations and which rests ultimately on their essential isolation and self-sufficiency in an unusually forbidding environment. What a Seri is interested in is not a neat job but one that will substantially meet his immediate need. Their modern plank boats are weak in plan, badly joined, and always leaky; but they serve. A structurally stronger boat would probably profit noth-

2: Kroeber E-5 (1930)1931 NU31 Seri NU31

SUMMARY AND CONCLUSIONS

121 Knowledge of the Seri is still in its infancy. McGee's actual
114 observations are excellent but slender in range. He has interwoven them with conjectures, some of which are erroneous and others unproved and doubtful. Intensive study of the Seri will be difficult, chiefly for physical and practical reasons, but, to judge from such explicit data as are in hand, should prove them to be a tribe unusually interesting indeed, yet fundamentally similar to others in the same region. So many of their known traits are shared with one or another of these tribes, that it is practically precluded that complete investigation will leave the Seri as a unique people or even as one set widely apart, except in their historical fortunes.

13 The most distinctive thing about the Seri is their environment.
●182 This is extremely arid and lacking in water supply, but not desert in the ordinary, untechnical sense. Botanists describe it as a succulent vegetation desert. It is fairly well stocked with food inland and rich in food along shore. This territory is able to support a fair sized population, but scatters it and keeps it from settling down. The land is also inhospitable and difficult to strangers who are not ready to adopt the Seri mode of life. This fact has helped preserve Seri ethnic integrity and culture to an unusual degree. A considerable fraction of original Serian territory is wholly unoccupied by civilization today, a full three centuries after its frontier was settled. The Indian neighbors of the Seri, all being farmers in fertile valleys, had no more incentive or ability than Caucasians to penetrate Seri territory sustainedly.

Across the Gulf, the peninsula of California presents a very
171 similar environment, and was inhabited by tribes of very similar subsistence and residential habits, culture level, and temperament.
174 But the Baja Californians differed from the Seri in being so situated, with reference to the rest of the world, that the length of the peninsula cut them off, except in the northern portion, from nearly all outside relations. Each group in the peninsula thus had contacts and stimuli only from others of similar culture. The Seri, on the contrary, having long been surrounded on the landward side by peoples of higher cultural level, were able to exploit this difference, in part by adopting cultural traits from their neighbors; and perhaps still more largely by preying upon them economically; while their habitat afforded them a refuge from destructive reprisals. Such may have been the condition in pre-Columbian days. At any rate it has been such since the coming of the Spaniards, and has made the "history" of the Seri different from that of the Baja Californians.

174 Three islands, Tiburon, San Esteban, and San Lorenzo, form stepping stones from Seri mainland to the peninsula. The water gaps between them are navigable to native craft and have been navigated

3:Davis & Dawson I-5 (1822-1940) 1945
NU31 Seri NU31

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FIG. 2. THE PELICAN SKIN ROBE
A TYPICAL WOMAN'S GARMENT BEFORE THE ADVENT OF THE COTTON CLOTH AND RAGS THAT REPLACED IT.

131 bounded coastal plain, lived a life so independent and so oblivious of the outside world that they might well have been on another planet.

182 105 The hard, inhospitable natural environment afforded by Seriland long ago moulded the characteristics of its people and their whole mode of life. The distance between reliable food sources in the sea and supplies of fresh water created a pedestrian habit whereby they acquired a remarkable fleetness of foot and tremendous physical endurance against thirst and weariness on the trail. The monotonous sea-food diet induced a wandering, roving life in search of game and vegetal produce to supplement their meager rations. They became a homeless, burden-bearing people, wandering in family

[p. 194(A)]

105 groups or elans between the waterholes and
182 their temporary dwellings by the sea, chasing for game or searching for cactus fruits, sleeping wherever weariness overtook them, or where the successful end of a hunt left them gorged and drowsy. Under a climate where frost is almost unknown they needed no protection except from the sun, and built no other dwellings than their brush-heap jacals (Fig. 3). Living in animal-like savagery, without commerce or industry, the Seri's every bodily character and function were directed toward the provision, day by day, of the food and water necessary for life.

312 Potable water, a commodity so abundant in most regions as to divert conscious attention from its paramount role in physiologic function and in industrial economy, attained in Seriland the primary place of importance because of its rarity. In that arid land it is scanty to the extreme. Two thirds of the meager supply is confined to a single rivulet in the interior of Tiburon Island (Fig. 4). Because of this and other widely separated aguajes within the island whose shores provided the greater part of their food resources, the Seris early found this island the most tolerable habitat in their desolate realm.

225 The most conspicuous single article in the
[262] dietary of the Seri, and undoubtedly that which first determined the location of his habitat, is the green sea turtle which is abundant throughout the Gulf of California, but particularly so in the narrow channel between Tiburon Island and the mainland. There the shallow lagoons abound with its marine grass food plant, and the sandy beaches provide optimum conditions for egg laying and hatching. In consequence of this natural provision for abundant food, easily obtained, perhaps half the aggregate life of the Seri tribe came to be spent within easy reach of the feeding and breeding grounds of the turtle.

[361] The most extensive and permanent of all Seri communities was established on the channel side of the island, just back of the lagoon in which the turtles feed and whose sands provided eggs and the succulent flesh
225 of newly-hatched turtle young. When fe-
501 males could not be captured at the laying grounds, the big chelonians were speared

[p. 194(B)]

[text continues on p 195(B)]

171 the latter are largely unconcerned with by far the greater majority of them.
825 If there is any magical importance attached to any of the species, it has not been discovered in the course of this field work and this fact has been corroborated by other recent observers.3

Summary

182 Extensive field work of this sort has many ramifications. One of the main
825 items investigated has been the acuteness of the native observation of animals. In the case of the Seris, this knowledge progressively increases both in volume and in accuracy with the increasing economic importance of the group. The mammals and large fish are the best known followed in order by birds, reptiles, smaller fish, insects and marine invertebrates. It is also obvious that local ecology, habits and anatomy of the various species of animals set definite limitations upon observation. Lack of understanding of the hibernation of reptiles through the winter is a case in point. Another example is in the Seris' inability to distinguish between the sexes of birds. Purely cultural factors are also potent as can be seen in the standardized responses to the questions about the age of animals and the development of birds. Seri knowledge of animals is remarkably free from mythology, although a number of animals are known to have had mythological significance in the past.

825 There is little fear of animals except of those which are actually dangerous.

An interesting fact emerges from the comparison of the particular aspects of the knowledge of natural history. Namely, that this knowledge is not always symmetrical in that some facets of natural history are far better known by the Seris than others. An excellent illustration is provided here in the complicated ways of sexing animals, in their extensive knowledge of the food habits of some of the animals and their ecological environment, and by their very limited ability to guess correctly the age of animals.

Not all of these differences can be accounted for in natural terms and it is suggested that the answer to this asymmetry lies, perhaps, in the cultural factors unaccounted for in this study. In spite of their dependence upon a relatively few economically important species of animals, the Seris do make use of much of their animal environment in their diet, as would be expected of a marginal people who still live today in a fishing and gathering economy.

FOOTNOTES

127 1. This field work was made possible by research grants from the Department
114 of Anthropology, University of Washington. Most of the work was done in Desemboque, Sonora, during the summer of 1953 with some additional work there in May 1955.

For much help in carrying out this field work I am indebted to my friend, Leo Sandoval, a school teacher in Desemboque.

[89 cont.]

000 abundant flying and, especially, marine fauna.

For a modern technology, their region has great resources,
511 but for the culture of the Seri it is frankly inhospitable. The standard of living is exceedingly low, as is proclaimed by natives and foreigners and as is demonstrated by the illnesses and hunger that weaken the population.

[90] The Seri truly form part of our Western society, in
226 so far as they catch fish, with fishhooks and motorboats, to sell
439 in the markets of Hermosillo, Nogales, and Tucson, and they
[177] obtain payments in national specie and coin. The part that
● 182 they form, however, has its own internal structure, which regulates the relations with the environment and among its mem-
[161] bers, even though a group of 218 persons, which suffers severe alterations in percentages from disasters like the sinking of a boat or strokes of good luck like the establishment of a prosperous fishing camp, is almost insignificant for the nation.

Most probably they have never been much more numerous, and they must not have had great cohesion in the past, a situation explicable in view of their nomadic gathering economy.
621 Toward the close of the 18th century they were divided into bands, of which it is known that the most important were the Guaymas, Upanguaymas, Tepocas, Tiburones, and Salineros.
[648] They banded together at various times in order to defend themselves and to attack the nuclei of Mexicans of the zone, achieving combined action, but without effective political unity.

At present they seem to form a single group without marked
619 subdivisions, although they recognize affiliations like that of "Tiburones," "half-Papago," etc., which appear to have little real classificatory significance.

There is great uniformity: they speak a single language
184 incomprehensible to the rest of humanity; they have a relatively
619 uniform culture, and there is tribal unification for matters involving sexual exchange.

The most obvious relations are spatial; they have important
361 settlements that sprung up around the fishing establishments and are more or less permanently occupied. Of these, "El Desemboque," close to the mouth of a river from which they have been displaced, is the most important, with 80 per cent of the Seri

[90 cont.]

361 population. There is an obvious separation there between the
563 Seri and the yori, or non-Seri, with manifest differences in cultural patterns.

The yori occupy an extensive area per person; their homes are quite distant from one another, and four families in conjunction occupy a belt of land of about 100 by 50 meters.

361 The Seri are grouped by families, inhabiting minute squares of from one and a half to two meters to a side. The yori
182 feeling of prestige, based on the territorial expanse of their prop-
361 erty, contrasts with the feeling of security based on personal
511 contact that dominates many aspects of Seri life; the small size of the Seri habitation indicates, not a low standard of living, but a distinct [91] concept of comfort, according to which the Seri, having all the desert to live in, like the yori, confine themselves to the limits that personal contact permits.

In January, 1952, there were 33 dwellings, with an aver-
592 age of 4.6 persons in each, those lodging four, five, and six persons frankly predominating. Each three or four more closely related families occupied contiguous homes, forming relatively separate conjunctions by themselves, which we might call
596 macrofamilies.

The family is the basic Seri institution, which is manifest in all aspects of life: it is the center of production, co-operation, the division of labor, education, diversion, government, etc.

582 Going beyond the family and macrofamily organization,
619 we have a tribal structure based on the generalized exchange (2)
621

2. Lévy Strauss, Les Structures élémentaires de la Parenté [Elementary Kinship Structures], Paris, 1949.

of members for concluding marriage, by which all the Seri are actually linked by consanguinity or affinity. One is almost able to include all the members of the tribe on a single genealogical chart, systematically excluding only some few outsiders who have penetrated the group.

582 This situation, which would make one think of a primitive

237 On the other hand, the hides of all of these three animals had been traded off to the Mexicans, [439] but this again was now discarded. This would merely indicate the fluctuation of collapse of the [182] demand from the outside rather than any intrinsic change in the Seri values.

Incidental use of the horns of the bighorn had been denied by all of the younger informants although admitted by Miguel Barnett. However, as I observed, the horns of this sheep are sometimes [415] used as drinking cups. Several of them were [181] lying around in the usual disorderly way of the Seris, now and then picked up for drinking and then again discarded. But the use of them struck me as most casual.

224 *Hunting:* Hunting takes a variety of forms 411 and includes a variety of weapons, from .22 caliber and .30/.30 caliber rifles to spear, stone and throwing stick. Bighorn and deer are followed on foot but without dogs, probably because without dogs they may be easier to surprise. This hunt takes place in daytime. But the peccary is hunted with both the spear and the rifle and with a pack [231] of dogs, and only by the adult men. There is an [885] emphasis on the "adult," this surely owing to the certain amount of danger connected with the chase of the peccaries. The weapons of the chase dwindle to the throwing stick or a stone when it comes to the jackrabbit. Badgers, I was told, are also killed with the same weapons. But formerly, the informants said, bow and arrow was much instrumental in hunting the smaller beasts.

* 825 Other animals, according to the Seris, are not [224] hunted now, nor had they been in the past. Justification for this ranged from the usual "because it isn't done" to the more specific reasons. The skunk is "neither hunted nor eaten because it [225] stinks." The whale is considered "too big to kill" while the killer whale is "too fierce." The harmless *tonita* (dolphin)[1] was reported somewhat hazily as "sometimes killed" but the comments were inconclusive and were denied by other informants.

[224] Two other species had been reported as hunted in the past but not at the present time. The Ringtail cat was supposedly hunted with the slings [225] while the sea lion was hunted down "with a rifle or rock but not with the harpoon because of its great strength, it would break the harpoon." This, however, was "perhaps 25 years ago." Why the sea lion is no longer pursued is uncertain, unless there is again a lack of demand from the outside while the Serian economy is so much centered on fishing.

231 *Pets:* How many species of animals are kept as pets on and off is difficult to say. Like most hunting and gathering groups the Seris are fond of pets but their interest in them depends entirely on an accidental capture. Among the wild mammals of the region there are few that could be captured and tamed easily. The badger which I mentioned already was the only mammal I saw

[237] [1] I have seen bones of beached whales used for stools and [362] also the skull of the *tonita* used as a chair. But it must be remembered that these animals got stranded on the beach. They were not deliberately hunted down.

[P 10 B]

½ [Lia - deer, bighorn and peccary - Analyst]

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*825 grounds. On the other hand, sometimes absence of a bird, the ibis for example, from Desemboque has been explained by lack of suitable mud.

Another sort of explanation for the presence or absence of a bird in a locality has been the presence or absence of fresh water. This was true of the dove which is said to be found near fresh water (for example in the Desemboque arroyo) which it drinks. This observation is not entirely amiss. Regardless of how far from fresh water the dove will nest, it does like to congregate near it. Still another explanation has been offered for the woodpecker and the humming-bird and the osprey. The humming-bird, they say, is rare where there are no trees. (This in view of its nesting habits and its feeding habits is not surprising.) The woodpecker, they think, must have a sahuaro to live in (quite correct) and this is why it is absent from the region of Infernillo where there are no sahuaros. The osprey, they say, also likes to live more in areas where there are sahuaros because it nests on the dry ones.

Parental Function

Here such meagre data as are available show that according to the informants rearing of the young among the birds is entirely the female's preoccupation and that the male has nothing to do with it. They repeatedly emphasized that "young do not know the father" or that "they are fed only by the mother." This hardly reflects the situation in nature, at least for a great many birds and especially for the song birds. But there is in the Seris, evidently, a streak of belief in the uselessness and uncooperativeness of the male in such matters. This belief is met up with time and again in many groups of animals, and probably represents a conventional attitude, not tempered by observational evidence.

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Dangerous Birds

*825 With the exception of the eagle, no bird is considered dangerous and the eagle, who is supposed to be able to lift and attack a man, earns its reputation only on hearsay.

[P. 21 B]

*825 ence of feather. Uncertainty about the bat there is significant, considering the combination of traits. Other criterja may also be employed. Crabs are distinguished from some of the other marine crustaceans by their hairiness. Differences among the insects are suggested by general shape, hairiness and habitat although also certain features of behaviour sometimes suggested affinity.

Distinctions made within the groups coincide on the whole with the natural groupings, at least for the more conspicuous forms. Hence, comes the breakdown of fishes into two major categories: fishes proper on one hand, and mantas and sharks on the other, snakes and lizards among the reptiles and mammals proper and Cetaceans among the mammals. In a way the Seris' greatest talents appear to be in their ability to recognize the reptilians and amphibians. Here they confused only two species: the two small inconspicuous Utas.

[182] As for the ability to identify an animal, it is directly related to its economic importance and relative degree of frequency in the territory, as one may well expect.

[824] A movement represents the basic difference between animals and plants to the Seris. This is why a sponge is considered a plant while sessile molluscs are animals.

Sexing

Three tendencies distinguishing sexes run through the entire gamut of the animal forms, through all the classes except in the birds: the males are larger, darker and more brightly colored than are the females. These tendencies the Seris may combine in different ways. In the reptiles it is color pattern rather than size that suggests to them the male animal and while the male snakes tend to be darker than the females, in the lizards they tended to indicate the prevalence of the bright color in the males.

Then also in several groups very specific diagnostic traits are employed, as a rule in form of all sorts of extra appendages which are supposed to decorate the males. This is interesting, because it suggests the presence of such extra structures in the males rather than in the females, and, as has been seen from the text, these structures are often attributed to the males regardless of whether or not they really exist in them. The femoral ridge in the male lizards is an especially good illustration of this principle.

[182] There is also a suggestion that in one instance at least the Seris transpose their own social situation on the animals. The bees they claim have "chiefs" and these "chiefs" are males and they are also larger. Here socio-anthropomorphic interpretation is very clear.

But as indicated in the text, the sexing criteria differ often in different groups and it is only fair to show that birds represent an exception to the three major tendencies. The birds have sexes all right but the Seris cannot tell them apart. This requires no further commentary if we reflect why the Seris must think that way.

[182] [562] [P. 55 A] Finally, there is one more interesting point:

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no temperamental differences between the sexes can be detected which would only suggest that here the Seris do not introduce the interpretations from their own social situations, because they do have very clear cut ideas of the temperamental differences between men and women.

Age

Here aboriginal knowledge is virtually non-existant nor have the Seris made much effort to try a guess. There are hints that sometimes they associate the length of life of smaller animals with the season, obviously because these disappear for the cold season. Another feeble tendency was for the older informants to suggest greater longevity of an animal than it was customary for the younger informants. Finally, what little knowledge there was, it was still perceptibly greater for the reptiles than for almost any other class and this is quite in line with the general state and complexity of the Seri knowledge of the natural history of these creatures.

Size and Weight

[182] Here occupational influences are overwhelming. The weight of fishes and mammals was on the whole correctly estimated — this associated with the economic importance of these animals. Same features in the reptiles came out only so-so on the general scale and here, surprisingly, not too well on the economically important marine turtles. A rule of thumb is applied (usually incorrectly anyway) to the birds while the remainder of animal groups is covered by gross ignorance and disinterest in this respect.

Development

In general Seri knowledge of the mammalian development is far ahead of the rest of the animals and progressively becomes more and more obscure with the decrease in size. Within this range, specific ideas differ and often are associated with the particular group of mammals. One classic example is fishes which they divide into the viviporous and oviporous with sharks and mantas in the first category and the rest of the fishes in the second. The distinctions between the egg laying animals and those that are born alive run pretty much through the entire kingdom. Insects are the sole exception here but this is largely because of the lamentable lack of knowledge by comparison with the other animals.

Sequential development generally also runs through all of the groups. The belief in the time sequences is so striking that it covers even such groups as the fishes, for here the details of the mating sequences are not understood and, according to the Seris, there must be a time lag between mating and the delivery of the eggs by the female. At other times, such sequences are expressed in another sort of cultural fiction. I have in mind the birds where one month each elapses between the delivery of the eggs, hatching out of the young and the flight of the nestlings.

Knowledge of the young litters or the number of eggs laid by the birds or the oviporous reptiles

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#825 on the other hand usually falls very close to what happens in the natural situation. Here cultural factors enter: the Seri boys habit of collecting eggs. [857]

In general, in association with the development, the insignificance or complete absence of the male's parental function is well recognized. Only in the birds and mammals occasionally male's interest in the young had been indicated but even that rarely.

Food

In this field the Seris' knowledge is much better than their knowledge of the development. Herbivores and carnivores are usually quite correctly identified, at least for the majority of the animal groups. Crustaceans they think are largely scavengers—with great degree of accuracy. Predators and their victoms are as a rule scaled down according to the size. Some animals are considered relatively or completely free from predation and when this is so, reasons were usually stated in terms of some peculiarity of structure, size or behaviour. Power of flight figures strongly in this, because only a few birds, they thought, are subject to predation.

DISTRIBUTION

a) Geographical

[182] Knowledge of the geographical distribution of animals as expected is a function of the acquaintance with the particular area or locality and of the frequency of visits to them. It also indicates strong association with the ecology of the habitat, with such features as presence or absence of sand, rocks, types of bottom in waters and so forth. On the relative scale, once more the mammals are best known, insects least.

b) Seasonal

General suggestion of the greater number of species occurring in the hot than in the rainy season runs through all classes of animals. But while in most. birds included, the suggestion is only slightly in favor of the hot season, for the reptiles and amphibia it is overwhelmingly in favor of the summer. Oddly, there is no such clear cut association between the presence of insects and season except for few select groups. The *Lepidoptera* and *Neuroptera* are, according to the Seris, largely creatures of warmth. while the *Orthoptera* are of the rains. In general this short of knowledge is quite conspicuous.

c) Ecological

Here the Seris excell and this knowledge of habitats of a very large number of animals is considerable and perhaps more solid than any other feature of the natural history. In species after species, in all groups, habitat preferences were stated (and correctly). It is interesting that the detailed information here was available for practically all listed species of birds, molluscs and fishes. Great deal of information was also pro-

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vided for other creatures and even 2/3 of the insects. This indicates on one hand the connection between this type of knowledge and economic activity of the adults and on the other hand between the Seri boys' habit to collect and play with all sorts of animals from very early age. This knowledge of the habitats sometimes is even reflected in the aboriginal name of the animal such as for example the use of suffix or prefix *ax* meaning water in several forms associated with water.

Migrations

In contrast to the ecological distribution, knowledge of animals' migrations stands somewhere very near the very bottom in the richness, detail and accuracy. There is but bare suggestion of migration among the mammals and birds and where it does exist among the latter it curiously includes all three overwintering species. This is in contrast to this lack of knowledge or perhaps interest (or both) of migrations of all other animals, Seris' knowledge of the fish migration is much richer. Here at least there is a distinction between the migrating numbers and the size of fish: large fishes migrating supposedly singly, little ones in "millions."

Rhythmic Activity

Rhythmic differentiation is interesting because it clearly divides animals into the nocturnal, diurnal or those that are active in day and at night and because there is a clear association by the groups. Thus all marine animals are considered as both diurnal and nocturnal. But there are also differences in the relative degree of knowledge of different classes. While reptiles, amphibians and mammals stand at the top, the knowledge of this type of behaviour in birds is very fragmentary and in the insects scant and inconclusive, while for the molluscs non-existent.

In this respect, the reptiles probably are most clearly defined and best known.

There is also a clear recognition of the existence of the noon siesta or at least of slowing up of the animal activity. But this applies to the terrestrial animals and there is no suggestion of the siesta for the inhabitants of the sea.

Toxicity

At the apex of toxicity as a group stand unquestionably reptiles and amphibians, with the insects coming next and the marine animals which I loosely brought together under the heading of "miscellaneous" a poor third. Of the reptiles and amphibians 11 species are considered toxic, in various degrees and another seven as dangerous, 44 and 28% respectively, making the total an impressive 72% of all reported species. Among the insects about 20% are considered dangerous and fewer yet toxic; among the mammals fewer yet, with the bat only listed among the toxic forms and that on a disputed evidence; among the birds the eagle as the only dangerous beast and that admittedly on the hearsay; and finally among the molluscs none at all.

The fact is that only rarely these ideas were amiss and only few forms are believed dangerous

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9:Malkin F-S (1953-1955)1962 MJ31 Seri MJ31

*825 or toxic contrary to their genuine nature. When such contrasts exist, the beliefs cannot always be explained as a matter of the influence from the Mexican folklore. The reasons for this I discussed in the chapter on the reptiles and amphibians. The explanation for such beliefs depends mostly on additional field work. It is also interesting that in some of these instances (bat for example) there is a suggestion that the belief in the toxicity or other unpleasant traits not only is not associated with the Mexican folklore but is basically aboriginal, and it is on the way out among the younger men.

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Attitudes

*825 182 With rare exceptions Seri attitudes toward animals are remarkably sober, pragmatic and matter of fact. This is evident in how little folklore or irrational fear is connected with the animals. It all runs pretty much along the line of their generalized attitudes, world view and religion as suggested by other investigators (Kroeber 1930:4; This is also the opinion of Spicer, personal communication). Elements of mystery are almost completely absent and this is probably not entirely due to the disintegration of their religion and culture as Kroeber (*Ibid*) thinks.

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* 825 171 In other ways, their attitude toward animals ranges from indifference (adults) to downright deliberate cruelty (little boys). In this, the Seri boys differ markedly from the boys of some of the other groups I studied (Malkin 1958:89).

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Conclusions

From the presented evidence it is clear that Seri knowledge of the natural history of animals is disharmonic, that some animal groups are better known than others and also that there are great qualitative and quantitative differences in the degree of the knowledge of the special features of natural history within the groups.

Both cultural and environmental factors account for these differences. On one hand, the knowledge is related to the Seri boys' interest in the animals and to the adult's preoccupation with the economically important species. The direction of the change runs from the first to the second but in the final shakedown it is the gross economy that is more important. On the other hand, environmental factors, such as animals' behaviour, habits, and structure and most of all climate and generalized ecology influence and set the limits to the exploration of natural history by the aborigines. But careful distinction must be made in assessment of which factors and when are of dominant importance. It is never an none-or-all proposition.

Finally, there are temporal changes, related mostly to the shifts in the economy and these figure importantly in some of the features in our data.

It is true, that much of this can be only feebly hinted at from the Seri data alone. It is my conviction that all these things can be brought into much stronger relief only through series of comparative studies. Fortunately, a beginning stab in that direction has already been made (Malkin 1958).

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